

(NASA-CR-157966) SEASAT-A PROJECT  
MANAGEMENT REPORT (Jet Propulsion Lab.)  
28 p

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622-43

Unclass  
35398

OFFICE OF APPLICATIONS

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JET PROPULSION LABORATORY  
CALIFORNIA INSTITUTE OF TECHNOLOGY



SEASAT-A

PROJECT MANAGEMENT REPORT

Agency Code 655

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LEVELS 2 & 3

27 SEPTEMBER 1977

622-43

**OFFICE OF APPLICATIONS**

**JET PROPULSION LABORATORY  
CALIFORNIA INSTITUTE OF TECHNOLOGY**

**SEASAT-A**

**PROJECT MANAGEMENT REPORT**

**Agency Code 655**

**JP** →

**LEVELS 2 & 3**

**27 SEPTEMBER 1977**

JET PROPULSION LABORATORY

APPROVAL RESPONSIBILITY:

R.T. Park

Approved

*[Signature]*  
W.E. Giberson

ACHIEVEMENT RESPONSIBILITY:

## SEASAT-A PROJECT STRUCTURE

LEVEL  
2

SEASAT-A  
PROGRAM  
(NASA HEADQUARTERS)

LEVEL 1

LEVEL 2

SEASAT-A  
PROJECT  
(JPL)

LEVEL 3

LAUNCH VEHICLE  
SYSTEM  
(LeRC)

PROJECT  
OPERATIONS SYSTEM  
(JPL)

SENSORS  
(VARIOUS)

SPACECRAFT  
SYSTEM  
(JPL)

Page 1

**JET PROPULSION LABORATORY**

APPROVAL RESPONSIBILITY: R. P. Park  
W. E. Giberson  
ACHIEVEMENT RESPONSIBILITY: R. H. Green  
W. E. Giberson

**SEASAT-A  
NARRATIVE ANALYSIS**STATUS AS OF: 27 Sept. '77  
(Date) (Initials)**GENERAL**

As stated in the following text, the Project Schedule remains tight - however, work around plans have so far been devised which along with extended work schedules have enabled maintaining the launch schedule. The completion of Satellite Vehicle System and Interface Tests scheduled on December 15, 1977 is a major milestone and will be prime determinant in our ability to maintain the current Project Schedule.

It is contemplated that the Geophysical Algorithm effort will be formally initiated on October 3, 1977.

The Project Operations System Review is scheduled for October 26 and 27 at JPL and the Launch Vehicle System Review is scheduled for November 1 and 2, 1977 at GDC in San Diego.

**OCEAN EXPERIMENTS**

A scheduling meeting for the ARC CV-990 aircraft was held on August 24-25 at Ames. A significant disparity between OA-funded aircraft hours and OA-affiliated flight requests was identified. Some ten flights were tentatively assigned to Seasat-A in the July-August 1978 time period. A portion of these were intended to support the NOAA data collection activity discussed below. In the intervening weeks, schedule/funding pressures have jeopardized this assignment. A meeting is scheduled at NASA Headquarters on Sept. 29 to resolve the issue. Adequate support to the NOAA Surface Truth program will be given top priority in the assignment of Seasat-A CV-990 flights. Similar pressures have been felt by the JSC C-130, resulting in a recent reduction from 23 flights to 13 flights in support of this Project. The latter number is acceptable, provided that LaRC scatterometer and WFC altimeter checkout flights can be accommodated earlier in the year on a "piggyback" basis. An arrangement of this type has been tentatively negotiated with JSC.

A series of working meetings were held in early September between cognizant members of the Algorithm Development Task Group (ADTG) and responsible sensor/Experiment Team algorithm suppliers. As a result of these discussions a second, more definitive generation of algorithm specification sheets have now been generated, along with processing flow charts and algorithm definition responsibility sheets. These products, now in final preparation, were discussed at the 13th SSG meeting held at the NOAA World Weather Building in Camp Springs, MD on September 20-22 (see below).

(2)  
LEVEL

JET PROPULSION LABORATORY	<i>R. J. Price</i>
APPROVAL RESPONSIBILITY	R. J. Price
ACHIEVEMENT RESPONSIBILITY	<i>W. Gibbons</i>

## SEASAT-A NARRATIVE ANALYSIS

STATUS AS OF 27 Sept. '77 (Date) (Initials)

The 13th SSG was devoted to three principal topics: on the first day, engineering assessment plans were reviewed in detail, along with the mission planning team response to those plans, in the form of a detailed mission sequence for the first month of the mission. The SSG's response to both the engineering assessment plans and the corresponding mission sequence was favorable.

As indicated above, algorithm development activities were reviewed in detail, this, along with geophysical evaluation plans being the topic of the meeting's second day. A Project proposal for the formation and support of small geophysical evaluation task groups within each of the Experiment Teams was presented at that session, and discussed in detail at an executive session on the following morning. The proposal was thoroughly endorsed by the SSG, which also generated a recommendation that NASA implement a capability to produce a global geophysical data record upon completion of the evaluation/algorithm evolution phase.

The third day of the meeting was devoted to a discussion of surface truth data acquisition/processing/distribution plans. In addition to routine collection and dissemination of FNWC-provided surface truth and analysis data via the Project's auxiliary data record, special surface truth program activities were discussed. The major one of these was the intense program of data collection proposed by NOAA in the Gulf of Alaska in July of 1978. A Class-I oceanographic vessel (the "Oceanographer") is planned to be totally dedicated to the collection of data in support of Seasat-A sensor evaluation in this time period. Additional data collection will be accomplished by the NOAA EB-class buoys, the Canadian CV-580 aircraft and, more speculatively, NOAA P-3 aircraft, instrumented oil platforms and USGS vessels (no commitment has been obtained for the latter three, but one will be actively sought). A critical element in this plan is the participation of the two NASA aircraft discussed above to provide sensor calibration data by simultaneous satellite-aircraft observations with their respective versions of the microwave instruments. The proposed Gulf of Alaska program received the full endorsement of the SSG, and has now assumed a pivotal role in the conduct of the geophysical evaluation/algorithm evolution task.

### MISSION ENGINEERING

A preliminary version of the Seasat-A Mission Plan (PD 622-6, 8/22/77) has been distributed to the Mission Design Team and others for review.

A review of the hydrazine allocation for orbit adjust, orbit trim attitude control, etc. has been completed. Results indicate a mean plus three sigma requirement of 36.5 m/sec, as compared with a present capability of 46.5 m/sec (i.e. 104 lbs of hydrazine). However, some of the requirements are still a little uncertain and it is recommended that LMSC verify several areas, including orbit injection errors.

**JET PROPULSION LABORATORY**

R. J. Parks



W. E. Giberson

**SEASAT-A  
NARRATIVE ANALYSIS****APPROVAL RESPONSIBILITY**

R. J. Parks



W. E. Giberson

STATUS AS OF: 27 Sept. '77 (Date) Initials

Statistical data on WTR winds relevant to Seasat-A has been received and is being analyzed to determine the expected effect on launch availability. The data is somewhat limited, but preliminary results indicate an average reduction in wind speed near the evening launch time for Seasat-A.

The computed launch window on any day is about 1-1/2 hours, from 1815 to 1945 PDT, as limited by the desire to have at least 30 days of full sun on the spacecraft before part of each rev is occulted. This and other launch window constraints will be discussed at the Launch Vehicle Trajectory and Guidance Working Group Meeting at GDC on 9/22/77.

Maps and plots for the Southern hemisphere are now complete for the SATRAK calculator. A vendor will be identified soon, and the complete specifications will be sent to him.

The draft Algorithm Development Facility Functional Requirements document (PD 622-34) was distributed for user comments. Concurrently an approach has been adopted to develop an ADF system capability which shall host geophysical algorithms as they are defined and developed.

The Algorithm Development Facility Programming Standards (PD 622-35) was distributed.

The Algorithm Development Task Group (ADTG) has completed functional data processing diagrams and reviewed them with the sensor implementation managers and some experiment team members. These drawings will be distributed in October.

The Algorithm Development Task Group (ADTG) has prepared a recommended responsibility assignment for all currently known algorithms - these assignments will be reviewed and distributed in October.

The ADTG has prepared a recommendation on the "development order" for all known major functions shown on the above referenced drawings. This "development order" will be reviewed and distributed in October and the detailed schedule will be published.

The staffing of the ADTG has been completed. The group, consisting of seven key individuals will focus their efforts on the geophysical algorithms.

**JET PROPULSION LABORATORY**2  
LEVEL*R. J. Paul*

APPROVAL RESPONSIBILITY:

*W. A. Giberson*

ACHIEVEMENT RESPONSIBILITY:

**SEASAT-A  
NARRATIVE ANALYSIS**Status as of 27 Sept. '77  
(Date) (Initials)**PROJECT OPERATIONS**

JPL Mission Planning Team and GSFC Orbit Determination have planned a trajectory comparison test. The purpose of the test is to verify that orbital event times computed at JPL and GSFC agree within acceptable limits. This is necessary for the sequence generation functions.

A meeting was held at GSFC on 13 September, attended by JPL, LMSC, and GSFC personnel, to discuss and formulate detailed plans for the Spacecraft/Ground Systems End-to-End Compatibility Test (commonly called the POCC Compatibility Test) previously scheduled for the end of January 1978. The Test Plan developed by JPL and GSFC was reviewed in detail and is being updated for publication. In view of ongoing spacecraft test schedule readjustments, LMSC proposed a mid-January Compatibility Test date but it was determined that POCC systems would not be ready earlier than 26 January. One alternative considered was just prior to the Thermal-Vacuum Test in mid-February. It was determined that the schedule for the GSFC Compatibility Test Van (CTV) currently has enough flexibility to accommodate any of these choices. Further meetings were set up at LMSC on 21-22 September between JPL and LMSC personnel to work out a more detailed compatibility test sequence. It now appears that the test can be accomplished in one day instead of the previously planned four days.

The 17th Seasat-A mission operations planning meeting was held at GSFC on 14-15 September. Canadian personnel from CCRS attended for the first time and participated in very useful discussions concerning operational needs and interfaces with the POCC, including ground communications.

Revision 3 of the SIRD has been sent to NASA HQ for approval and has been distributed. The MCCC Support Plan publication has been rescheduled to 15 October. The GDS Test Plan is almost complete and has been rescheduled to 15 October. The preliminary version of the Space Flight Operations Plan is nearly ready and distribution has been rescheduled to 1 October.

The Project Operations schedule status is good. Ground data systems interface testing has begun with tape exchanges between GSFC and JPL and with POCC/Attitude System and POCC/Command Management System electrical interface tests.

The Sequence Working Group has published a preliminary sequence for the first 6 weeks of the mission. The sequence is based on meetings with sensor representatives regarding their needs for Engineering Assessment. The preliminary sequence was discussed at the Mission Operations Planning Meeting at GSFC on 9/15/77 and at the SSG meeting at NOAA on 9/20/77.

Revised Command Request Profiles and Command Dictionaries were provided to GSFC on 9/12/77. This is a part of the continuing effort to insure format and language compatibility between JPL MPT and GSFC CMS software.

LAUNCH SYSTEM

Work continues on the Atlas-Centaur second stage propellant tanks and the secondary structure.

The second stage tank assembly section and associated fairing sections have been completed.

No change has occurred in the launch vehicle capability during this period.

LAUNCH VEHICLE POSITIONING

Spacecraft weight at 2nd Second Engine Cut-off

Margin

- (1) Includes allowances for contingencies and uncertainties.

SATELLITE SYSTEM

The bus assembly and checkout continues on schedule. Two leaks developed during high pressure testing. Both are being repaired without impacting the schedule.

The sensor module assembly and test has undergone some re-ordering of activities due to late delivery of the CTU, and late adjustments of the sensor deliveries. The STDN compatibility test using the Compatibility Test Van has been rescheduled from October 5-8 to November 7-10. The start of power and data system tests are delayed until October 12. CART (transfer from Mfg. to Test) of the sensor module has been moved up to October 10 and requires acceptance by AFPRO without some sensors and thermal control hardware. The re-ordering still permits the satellite vehicle system test to start November 14 although extended work shifts will be necessary. The alignment of the satellite was complete except for final alignment of the scanwheels.

During thermal-vacuum acceptance testing the CTU encountered a command loading problem at high temperature ( $156^{\circ}\text{F}$ ). The problem is believed to be a defective IC and the decision was made to interrupt thermal-vacuum testing and repair the CTU. This problem along with further

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ACHIEVEMENT RESPONSIBILITY: W. E. Giberson**SEASAT-A  
NARRATIVE ANALYSIS** TSU No. 2STATUS AS OF: 27 Sept. '77 (Date) (Initials)

low temperature thermal cycling as required by the acceptance specification led to a six day delay of the CTU delivery and caused the sensor module assembly and test schedule change.

TSU No. 1 is in the final phases of acceptance testing. TSU No. 2 is in AFPRO/JPL buy-off.

Both NASA standard transponders and CDU's have been shipped to LMSC and accepted.

The beacon was delivered to LMSC and passed post-ship functional test. Delivery was accepted with an open item. The output spectral purity is out of spec in the presence of specified noise on the input power. Investigation is underway to determine if it is a problem to the SASS and if so to determine possible solutions.

The SAR antenna is assembled. The feed system performance has been measured and is slightly better than predicted. Environmental acceptance tests are underway. The schedule for an October 31 delivery to LMSC is very tight.

The SAR data link is flight configured and has been accepted by the SAR system.

The first Odetics tape recorder encountered a problem during vibration acceptance testing. A transfer from the operate to the ready mode occurs. The problem is under investigation. Initial suspicions involving the end-of-tape sensing mechanization did not disclose the problem but the investigation is incomplete.

Descope options to provide schedule slack from now to launch are still being studied. The second STDN compatibility has been eliminated. The satellite-to-POCC compatibility test has been reduced to one day. Still under consideration is the elimination of the RFI tests in the anechoic chamber and the elimination of verification of the thermal math model as an objective of the system thermal vacuum tests. A plan where these tests are done only if time and money permits may be adopted.

The award fee briefing for the sixth period was held at LMSC on Sept. 19, 1977.

**JET PROPULSION LABORATORY**

APPROVAL RESPONSIBILITY: R. J. Parks  
ACHIEVEMENT RESPONSIBILITY: W. T. Giberson

LEVEL  
2**SEASAT-A**  
**NARRATIVE ANALYSIS**STATUS AS OF 27 Sept. '77 (Date)  
(Initials)**SENSORS**

Altimeter - The engineering model TWTA was delivered to APL and integrated in the flight TWTA integration and altimeter RFI tests have been successfully completed.

Flight TWTA assembly and test activities are on schedule; delivery to APL remains scheduled for Oct. 1. After installation of the flight TWTA which will complete flight configuration, the altimeter will undergo vacuum temperature and final calibration and functional tests prior to delivery to LMSC, scheduled for Oct. 25. Preparations are underway for the joint WFC, JPL, LMSC preship review to be held at APL.

Synthetic Aperture Radar (SAR) - Final preparations are being made for shipment of the flight sensor and data link to LMSC. A joint JPL, LMSC preship review will be conducted at JPL on Sept. 28. Delivery to LMSC remains for Oct. 1.

Scatterometer (SASS) - The Scatterometer Electronics Assembly completed initial system testing and three axes of vibration exposure. During vibration, a problem was noted in the Solid State Stable Local Oscillator (SSS/LO). A failure analysis revealed that a component lead broke due to vibration responses. This has been corrected through a minor design change. Additional problems, unrelated to the vibration anomaly, were discovered during the unit repair and retest cycles. Corrective action has been taken to eliminate these anomalies and SSS/LO is currently in requalification testing. A second problem was noted during vibration testing in the Integrated Electronics Assembly (IEA) and traced to a ROM with an extraneous lead "floating" free. The ROM was replaced and all other ROMs have been X-rayed to check for additional extraneous leads. The sensor will begin thermal vacuum testing the last week in September. Prior to this test, the High Voltage Power Supply (HVPS) is being retrofitted with a new heater current control module and additional booster regulator circuitry is being incorporated to protect the sensor from potential component damage due to ground loop transients. Delivery of the Scatterometer to LMSC is planned for October 13.

A retrofit of the HVPS at LMSC if deemed appropriate will be accomplished in November. Design changes are being made in the second HVPS to decrease the probability of transformer voltage arcing failures. Two transformer redesign concepts are under final evaluation. Tests on one option, a modest change from the existing configuration ("reduced flange"), produced

**JET PROPULSION LABORATORY**LEVEL  
2

APPROVAL RESPONSIBILITY: R. J. Potts  
ACHIEVEMENT RESPONSIBILITY: W. A. Gibson

**SEASAT-A  
NARRATIVE ANALYSIS**STATUS as of: 27 Sept. '77 (Date)  
Initial(s)

encouraging results with the exception of a rather low voltage corona inception which could possibly lead to a voltage arc condition with time. Results of tests with a more extensive transformer bobbin redesign ("double bobbin") are presently being assessed. Following a review of all test results, one of the design options will be incorporated in the second HVPS. A second review will be held in November to determine if the second HVPS should be installed into the sensor for remaining LMSC tests and flight.

The Scatterometer antennas have successfully passed environmental testing and are completing final functional tests. All four antennas will be delivered early to LMSC in time for insertion loss and VSWR tests with the flight waveguides procured by LMSC.

Preparations are being made for a Scatterometer Electronics Consent-to-ship meeting the second week in October. The Antenna Consent-to-ship meeting is planned for October 6.

Scanning Multichannel Microwave Radiometer (SMMR) - The Seasat flight SMMR is currently in vibration tests and is scheduled to begin vacuum temperature testing the last week in Sept. An attempt is being made to deliver the flight sensor to LMSC in mid-Oct., two weeks earlier than scheduled in order to accomplish initial electrical integration tests using the flight sensor instead of the engineering model, the original plan. Preparations are being made for the joint JPL, LMSC preship review to be conducted at JPL.

Visual Infrared Radiometer (VIRR) - The VIRR is installed on the satellite sensor module. Preparations are being made with SBRC for support of initial integration and compatibility test at LMSC.

Sensor Integration - LMSC has issued the Seasat Calibration Report which contains sensor calibrations. The sensor data distribution assembly has been completed and is in test. This assembly will distribute sensor data in real time to the sensor ground support equipment during satellite system tests.

## JET PROPULSION LABORATORY

R. J. Parks  
S. J. Pal

APPROVAL RESPONSIBILITY:

W. E. Gibson  
H. H. Johnson

ACHIEVEMENT RESPONSIBILITY:

SEASAT-A  
PROJECT SCHEDULEORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976  
(Date) (Name) (Initials)LAST SCHEDULE CHANGE: 23 AUGUST 1977  
(Date) (Name) (Initials)STATUS AS OF: 27 SEPTEMBER 1977  
(Date) (Name) (Initials)

LEVEL 2

FISCAL YEAR

CALENDAR YEAR

1975

1973

1976

1977

1978

1979

1979

1 MAJOR PROJECT MILESTONES

2 PROJECT PLAN

3 MISSION DESIGN

4 MISSION PLAN

5 END-TO-END DATA SYSTEM DESIGN

6 LAUNCH VEHICLE SYSTEM

7 ANALYSIS AND ENGINEERING

8 ATLAS I REFURBISHMENT &amp; MODIFICATION &amp; PREPARATION

9 INTERFACE AND REVIEW ACTIVITIES

10 PAYLOAD FAIRING

11 SPACECRAFT SYSTEM

12 PROCUREMENT ACTIVITIES

13 BUS

14 SENSOR MODULE

15 SATELLITE SYSTEM

16 GFE SUBSYSTEM DELIVERY

17 MAJOR REVIEWS

18 SENSORS

19 VIR

20 SMAR

21 SCATTEROMETER

22 SAR

23 ALTIMETER

24 PROJECT OPERATIONS

25 MISSION OPS PLANS

26 MISSION OPS &amp; CONTROL

EXPERIMENT DATA PROCESSING

27 PROJECT REVIEWS

28

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JET PROPULSION LABORATORY

APPROVAL RESPONSIBILITY:

10  
Part

W. E. Gibson

R. J. Parks

ACTUALS AS OF: \_\_\_\_\_ 28 AUGUST 1977

ACHIEVEMENT RESPONSIBILITY

# **PROJECT FINANCIAL STATUS**

## **SEASAT-A**

*W. E. Giberson*

STATUS AS OF: 27 SEPTEMBER 1977 (From)

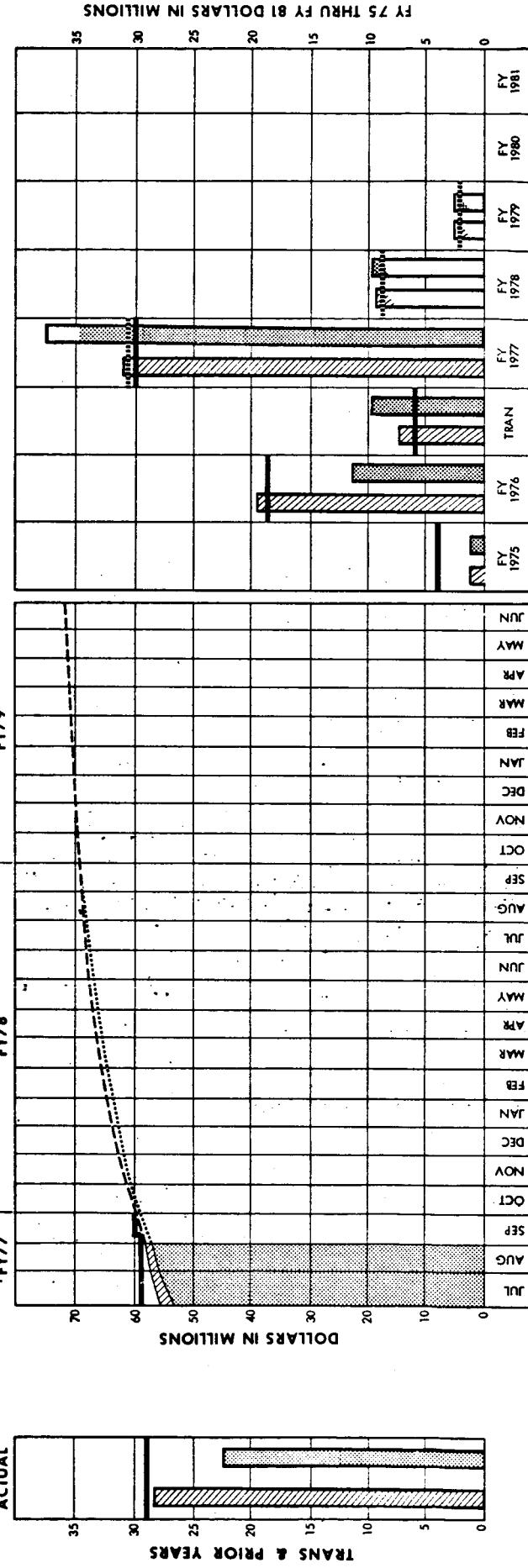
MOL NASA LINEAR

INFORMATION TO READ

10

FY70

10



CATEGORY	TRANS AND PRIOR	CUMULATIVE FROM INCEPTION										CATEGORIES BY FISCAL YEAR					
		JUL FY 77	AUG FY 77	SEP FY 77	1 QTR FY 78	2 QTR FY 78	3 QTR FY 78	4 QTR FY 78	1 QTR FY 79	2 QTR FY 79	3 QTR FY 79	FY 1975	FY 1976	TRAN	FY 1977	FY 1978	FY 1979
OBLIG' S COST	28,865 29,206	57,199	56,071	59,897	63,734	65,248	68,213	69,107	70,134	71,161	71,675	1,226	19,598	8,041	31,032	9,210	2,5
	22,076 34,552	56,171	56,628	59,438	63,061	65,008	68,103	68,080	70,118	71,156	71,675	1,148	11,416	9,512	37,362	9,642	2,5
OBLIG' S ESTIMATE COST																	
	28,865 OBLIG' S COST	57,199	56,071	59,897	63,734	65,248	68,213	69,107	70,134	71,161	71,675	1,226	19,598	8,041			
(50% WHITE)	22,076 30,190	56,171	56,628	59,438	63,061	65,008	68,103	68,080	70,118	71,156	71,675	1,148	11,416	9,512			
	29,000 (50% WHITE)														4,200	18,800	6,000

**LEGEND:**

ACTUAL      ESTIMATED

卷之三

FUNDS	FUNDS	OBLIG'S	OBLIG'S	COSTS	COSTS
—	---	/\	.....	.....	.....

## JET PROPULSION LABORATORY

APPROVAL RESPONSIBILITY:

*R. J. Pelt*  
R. J. Pelt

ACHIEVEMENT RESPONSIBILITY:

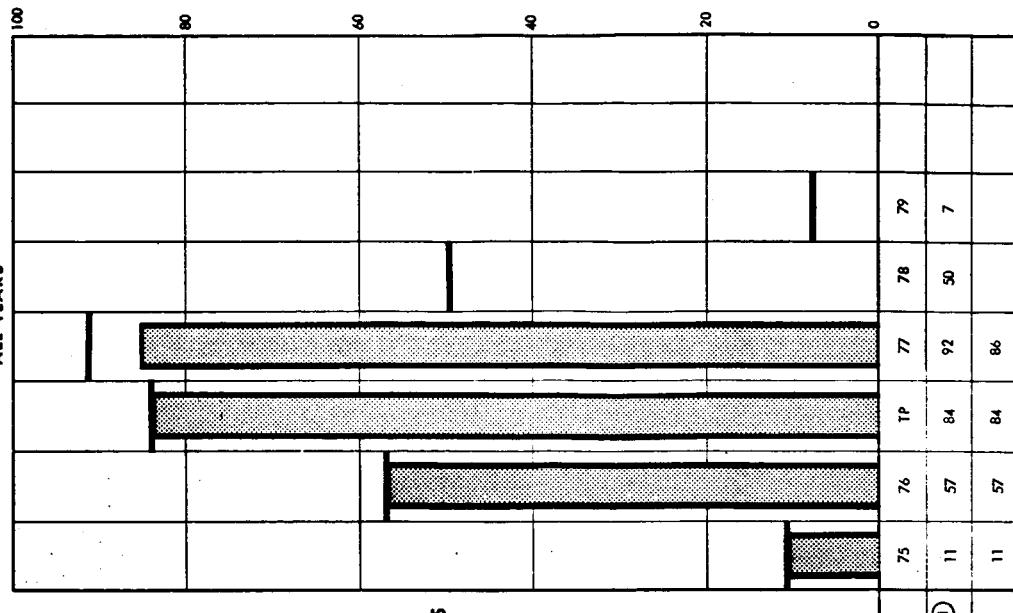
*W. E. Gherardi*  
W. E. GherardiSEASAT-A  
JPL IN-HOUSE MANPOWER

ACTUALS AS OF: 28 AUGUST 1977

STATUS AS OF: 27 SEPTEMBER 1977  
(Date)2  
LEVELPERCENTAGE OVERTIME  
AVERAGE FOR REPORT PERIOD

CURRENT FISCAL YEAR

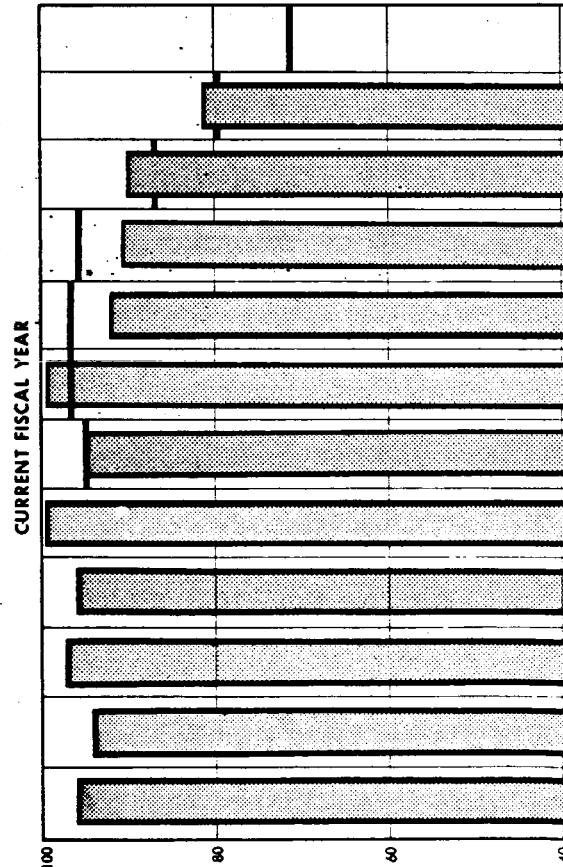
ALL YEARS



MANMONTHS

MONTH OF	O	N	D	J	F	M	A	M	J	J	A	S
MM PLAN (1)	96	94	97	96	99	95	97	97	96	86	80	72
MM ACTUAL	96	94	97	96	99	95	99	92	91	90	82	
M/Y FORECAST(2)					92	92	92	92	92	92	92	92

- (1) CORRESPONDING TO LATEST POP PLAN  
(2) POP DATA IN FEBRUARY AND AUGUST



MANMONTHS

FISCAL YEAR	75	76	TP	77	78	79
M/Y PLAN (1)	11	57	84	92	50	7
ACTUAL	11	57	84	86		

(TP PLAN = AVERAGE MANMONTHS PER MONTH)



## JET PROPULSION LABORATORY

W. E. Gibson  
APPROVAL RESPONSIBILITY:

John H. Gephart  
ACHIEVEMENT RESPONSIBILITY:

SEASAT-A  
FINANCIAL STATUS

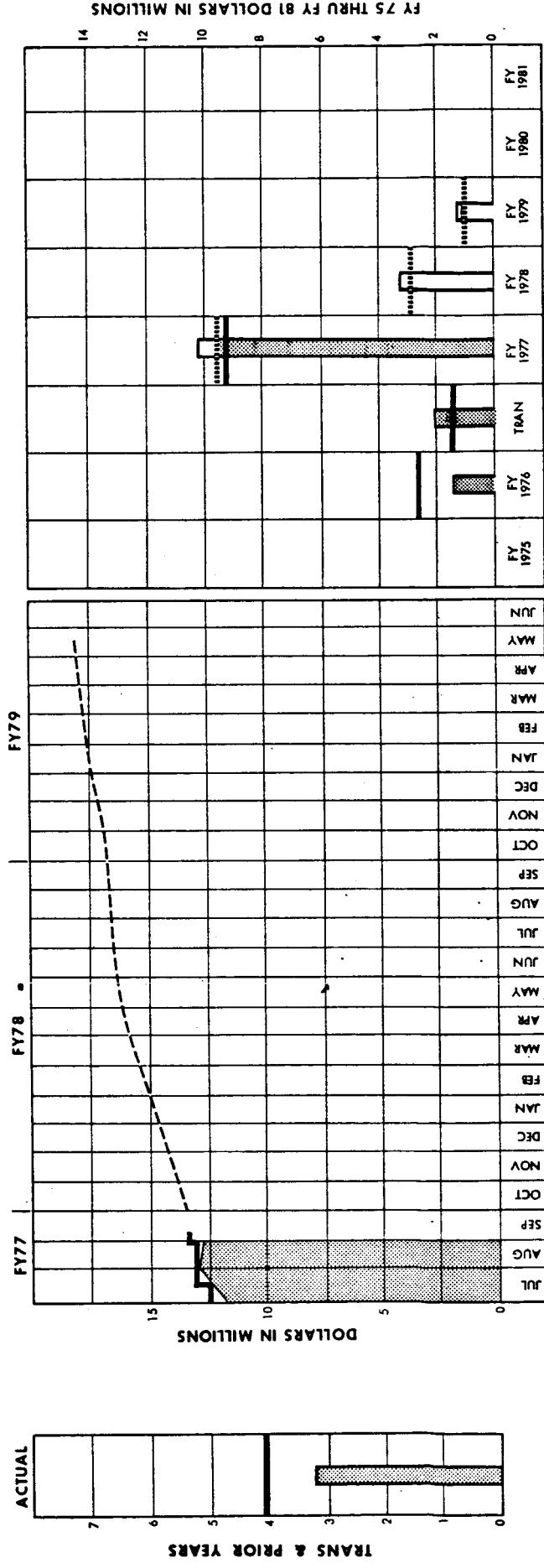
CONTRACT No. 954434

CONTRACTOR: LMSC

ACTUALS AS OF: 28 AUGUST 1977  
(Date)STATUS AS OF: 27 SEPTEMBER 1977  
(Date)

LEVEL 3

## INCEPTION TO DATE



CATEGORIES BY FISCAL YEAR										TOTAL AT COMPLETION		
	FY75	FY76	FY77	FY78	FY79	FY75	FY76	FY77	FY78	FY79	FY80	FY81
TRANS AND PRIOR												
ONLY CUM TO DATE												
JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC	JUL
FY 77	FY 77	FY 77	FY 78	FY 78	FY 79	FY 77	FY 78	FY 78	FY 79	FY 79	FY 80	FY 81
OBLIG <sup>1</sup> COST	4,100	9,256	13,356	13,748	14,912	15,934	16,548	16,775	17,326	17,052	18,012	18,012
OBLIG <sup>2</sup> COST	3,265	9,517	12,782	13,506	14,759	15,858	16,519	16,763	17,314	17,840	18,012	18,012
CURRENT ESTIMATE												
OBLIG <sup>3</sup> COST	4,100	9,256	13,356	13,748	14,912	15,934	16,548	16,775	17,326	17,052	18,012	18,012
ACTUAL	4,100	9,256	13,356	13,748	14,912	15,934	16,548	16,775	17,326	17,052	18,012	18,012

NOTES: FINAL ADJUSTMENTS IN THE MONTH OF AUGUST HAVE REMOVED THE COSTS ASSOCIATED WITH THE 120 INCH BOOSTER ADAPTER AND 90 deg ROLL (WHICH ARE FUNDED BY OSF) AND PROVISIONAL AWARD FEE.

ALL CATEGORIES EXCLUDE JPL BURDEN APPLICATION.

OBLIGATION AMOUNTS ARE ESTIMATED/ACTUAL JPL FUNDING TO THE LMSC CONTRACT.

LEGEND:  
JPL OBLIG'S  
TO LMSC  
CONTRACT

CURRENT  
ESTIMATE

ACTUAL COSTS

## JET PROPULSION LABORATORY

Alt Henderson  
A.W. Gibson  
John H. Gerpheide  
Achievement Responsibility: J.H. Gerpheide

3 LEVEL  
ORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976 (Date)  
LAST SCHEDULE CHANGE: 23 AUGUST 1977 (Date) (Initials)  
STATUS AS OF: 27 SEPTEMBER 1977 (Date) (Initials)

## SEASAT-A

## SATELLITE SYSTEM SCHEDULE

MAJOR MILESTONES	CONTRACT AWARD	PDR	PRR	SRR	1976												1977												1978															
					J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J										
CALENDAR YEARS					J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J										
MONTHS					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
MONTHS AFTER GO AHEAD																																												
SATELLITE SENSORS (GFE)																																												
SATELLITE BUS (BUS CONTRACT)																																												
SATELLITE SENSOR MODULE (SSE CONTRACT)																																												
SENSOR/SW/AUS INTEGRATION AND TESTS (SSE CONTRACT)																																												
SATELLITE SYSTEM ENGINEERING (SSE CONTRACT)																																												
CONTRACT END DATE																																												
CONTRACT O																																												
LAUNCH																																												
SHIP TO WTR																																												
START INTEGRATED SYSTEM TEST C																																												
CDR																																												
PDR																																												
PRR																																												
SRM																																												
SMAR																																												
SASSV ALT																																												
SAR																																												
1149 TO SSE CONTRACT																																												
CDR																																												
REQUIREMENTS AND DESIGN																																												
NEW AND MOD HARDWARE DEVELOPMENT AND TEST																																												
BUS FAB/ASSY/FACTORY TESTS																																												
BUS SYST TEST																																												
STRUCTURAL TEST																																												
FINAL ASSEMBLY																																												
AUGMENT																																												
COMPATIBILITY TESTING																																												
SATELLITE VEHICLE SYSTEM TEST																																												
ACOUSTIC THERMAL VACUUM																																												
FINAL SYSTEM TEST																																												
LAUNCH																																												
VAFB LAUNCH OPERATIONS																																												
PDR																																												
SRR																																												
SAT/GRD-DATA SYSTEM I.C.D.																																												
DESIGN INTERFACE CONTROL (SATELLITE/SENSOR-SATELLITE/BOOSTER DATA SYSTEM)																																												
MISSION PLANNING SUPPORT																																												
SATELLITE SYSTEM DESIGN REVIEW - SYSTEM TEST TEAM COORDINATION																																												
MISSION OPERATIONS SUPPORT																																												

## JET PROPULSION LABORATORY

W.E. Gibson

APPROVAL RESPONSIBILITY: \_\_\_\_\_

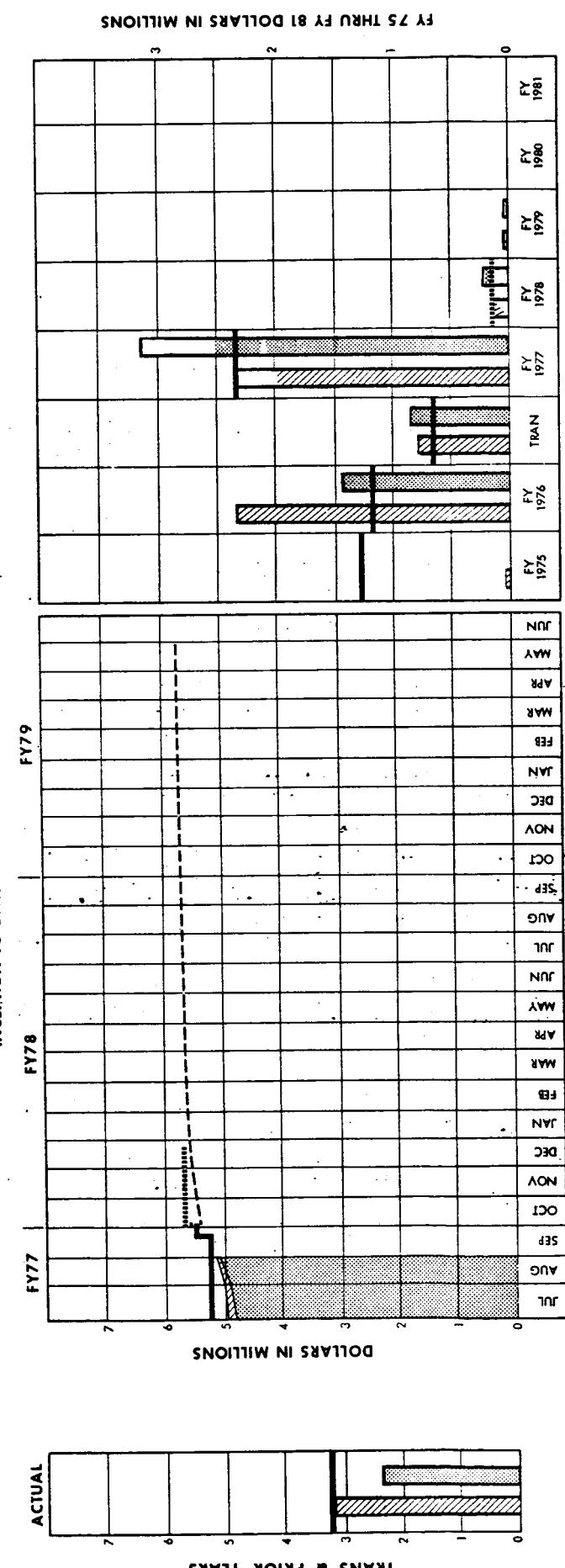
**SEASAT-A  
FINANCIAL STATUS  
LANGLEY RESEARCH CENTER**

ACHIEVEMENT RESPONSIBILITY: \_\_\_\_\_ W.L. Grantham

LEVEL 3

ACTUALS AS OF: 28 AUGUST 1977  
(Date)STATUS AS OF: 27 SEPTEMBER 1977  
(Date)

## BY FISCAL YEAR



CATEGORY	TRANS AND PRIOR	CUMULATIVE FROM INCEPTION												TOTAL AT COMPLETION
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
POP 77-2	1,161	1,974	4,998	5,135	5,500	5,561	5,585	5,628	5,654	5,660	5,666	5,670	5,670	5,670
CURRENT ESTIMATE	2,287	2,804	4,850	5,091	5,440	5,561	5,585	5,628	5,654	5,660	5,666	5,670	5,670	5,670
ACTUAL														
FUNDS (50% WHITE)														

LEGEND: ACTUAL ESTIMATED

FUNDS  
 OBIG'S  
 COSTS

NOTE \$:

## JET PROPULSION LABORATORY

*WT Johnson*  
W. E. Gibson

APPROVAL RESPONSIBILITY:

ACHIEVEMENT RESPONSIBILITY:

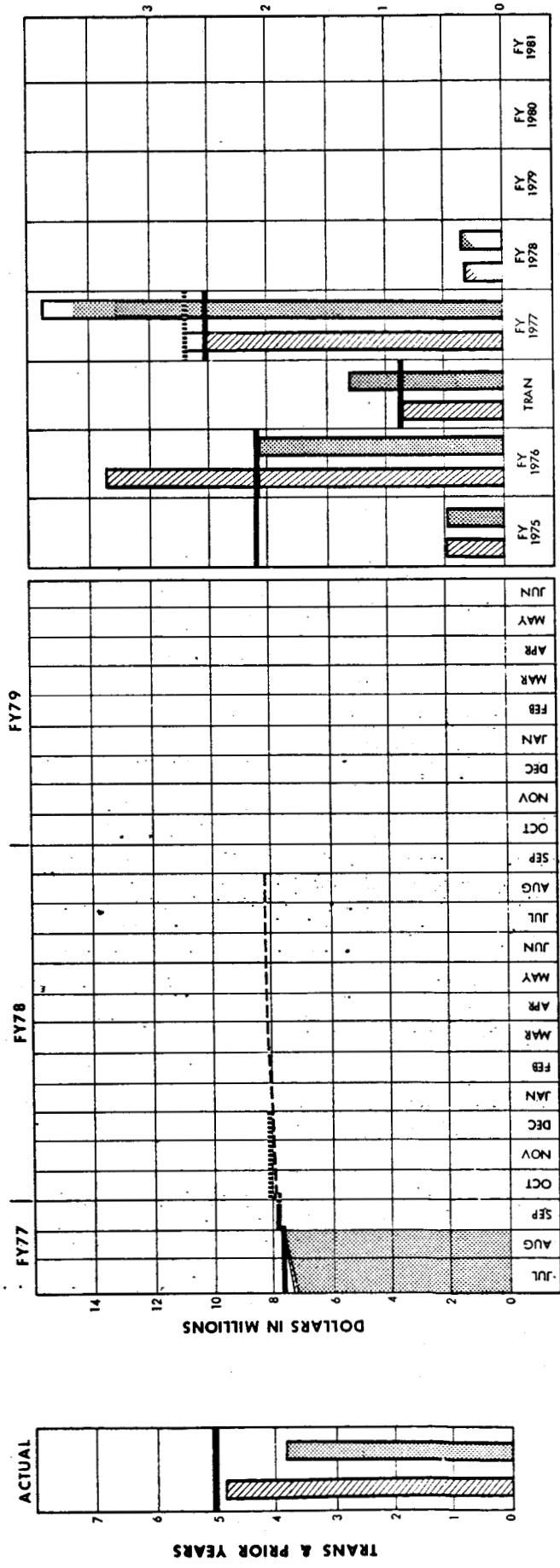
W. A. Bracco

SEASAT-A  
FINANCIAL STATUS  
WALLOPS FLIGHT CENTER

LEVEL 3

ACTUALS AS OF: 28 AUGUST 1977  
(Date)STATUS AS OF: 27 SEPTEMBER 1977  
(Date)

## INCEPTION TO DATE



## CUMULATIVE FROM INCEPTION

CATEGORY	TRANS AND PRIOR	CUMULATIVE FROM INCEPTION											
		JUL FY 77	AUG FY 77	SEP FY 77	1 QTR FY 78	2 QTR FY 78	3 QTR FY 78	4 QTR FY 78	1 QTR FY 79	2 QTR FY 79	3 QTR FY 79	4 QTR FY 79	FY 79
POP 77-2	OBIG'S COST	5,100	2,555	7,655	7,830	8,120	8,158	8,164	8,167	8,167	8,167	8,167	493
		3,916	3,708	7,624	7,823	8,086	8,140	8,164	8,167	8,167	8,167	8,167	493
CURRENT ESTIMATE	OBIG'S COST	5,100	2,555	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	493
ACTUAL	OBIG'S COST	5,100	2,555	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	493
FUNDS		5,100	3,916	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	7,655	2,100

LEGEND: ACTUAL ESTIMATED

—	FUNDS	.....	FUNDS
—	OBIG'S	----	OBIG'S
....	COSTS	.....	COSTS

TOTAL

AT

COMPLETION

	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981
	493	3,381	1,226	2,730	337		
	493	2,084	1,339	3,507	344		



## JET PROPULSION LABORATORY

*W. F. Gibson  
John J. Spear*

APPROVAL RESPONSIBILITY: W. F. Gibson  
ACHIEVEMENT RESPONSIBILITY: A. Spear

## SEASAT-A

## SCATTEROMETER SENSOR AND ANTENNA SCHEDULE

LEVEL 3

ORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976  
(Date)LAST SCHEDULE CHANGE: 27 SEPTEMBER 1977  
(Date) (Initials)STATUS AS OF: 27 SEPTEMBER 1977  
(Date) (Initials)

FISCAL YEAR

CALENDAR YEAR

1975

1976

1977

1978

1979

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1. SENSOR

2. CONTRACT

3. DESIGN

4. REVIEWS

5. FABRICATION AND TEST

6. EM. HVPS DELIVERY TO SENSOR INTEGRATION

7. FM REFURBISHMENT

8. HVPS / TWT INTEGRATION AND TEST

9. PRE/POST LAUNCH SUPPORT

10. FLIGHT HVPS DELIVERY TO LMSC (3)

11. MAJOR PROCUREMENT

12. CONTRACT

13. REVIEWS

14. DESIGN

15. FAB/TEST/DELIVERY

16. CONTRACT

17. REVIEWS

18. DESIGN

19. FAB/TEST/DELIVERY

20. CONTRACT

21. REVIEWS

22. DESIGN

23. FAB/TEST/DELIVERY

24. CONTRACT

25. REVIEWS

26. DESIGN

27. FAB/TEST/DELIVERY

28. CONTRACT

29. REVIEWS

30. DESIGN

31. FAB/TEST/DELIVERY

32. CONTRACT

33. REVIEWS

34. DESIGN

35. FAB/TEST/DELIVERY

36. CONTRACT

37. REVIEWS

38. DESIGN

39. FAB/TEST/DELIVERY

40. CONTRACT

41. REVIEWS

42. DESIGN

43. FAB/TEST/DELIVERY

44. CONTRACT

45. REVIEWS

46. DESIGN

47. FAB/TEST/DELIVERY

48. CONTRACT

49. REVIEWS

50. DESIGN

51. FAB/TEST/DELIVERY

52. CONTRACT

53. REVIEWS

54. DESIGN

55. FAB/TEST/DELIVERY

56. CONTRACT

57. REVIEWS

58. DESIGN

59. FAB/TEST/DELIVERY

60. CONTRACT

61. REVIEWS

62. DESIGN

63. FAB/TEST/DELIVERY

64. CONTRACT

65. REVIEWS

66. DESIGN

67. FAB/TEST/DELIVERY

68. CONTRACT

69. REVIEWS

70. DESIGN

71. FAB/TEST/DELIVERY

72. CONTRACT

73. REVIEWS

74. DESIGN

75. FAB/TEST/DELIVERY

76. CONTRACT

77. REVIEWS

78. DESIGN

79. FAB/TEST/DELIVERY

80. CONTRACT

81. REVIEWS

82. DESIGN

83. FAB/TEST/DELIVERY

84. CONTRACT

85. REVIEWS

86. DESIGN

87. FAB/TEST/DELIVERY

88. CONTRACT

89. REVIEWS

90. DESIGN

91. FAB/TEST/DELIVERY

92. CONTRACT

93. REVIEWS

94. DESIGN

95. FAB/TEST/DELIVERY

96. CONTRACT

97. REVIEWS

98. DESIGN

99. FAB/TEST/DELIVERY

100. CONTRACT

101. REVIEWS

102. DESIGN

103. FAB/TEST/DELIVERY

104. CONTRACT

105. REVIEWS

106. DESIGN

107. FAB/TEST/DELIVERY

108. CONTRACT

109. REVIEWS

110. DESIGN

111. FAB/TEST/DELIVERY

112. CONTRACT

113. REVIEWS

114. DESIGN

115. FAB/TEST/DELIVERY

116. CONTRACT

117. REVIEWS

118. DESIGN

119. FAB/TEST/DELIVERY

120. CONTRACT

121. REVIEWS

122. DESIGN

123. FAB/TEST/DELIVERY

124. CONTRACT

125. REVIEWS

126. DESIGN

127. FAB/TEST/DELIVERY

128. CONTRACT

129. REVIEWS

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131. FAB/TEST/DELIVERY

132. CONTRACT

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135. FAB/TEST/DELIVERY

136. CONTRACT

137. REVIEWS

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139. FAB/TEST/DELIVERY

140. CONTRACT

141. REVIEWS

142. DESIGN

143. FAB/TEST/DELIVERY

144. CONTRACT

145. REVIEWS

146. DESIGN

147. FAB/TEST/DELIVERY

148. CONTRACT

149. REVIEWS

150. DESIGN

151. FAB/TEST/DELIVERY

152. CONTRACT

153. REVIEWS

154. DESIGN

155. FAB/TEST/DELIVERY

156. CONTRACT

157. REVIEWS

158. DESIGN

159. FAB/TEST/DELIVERY

160. CONTRACT

161. REVIEWS

162. DESIGN

163. FAB/TEST/DELIVERY

164. CONTRACT

165. REVIEWS

166. DESIGN

167. FAB/TEST/DELIVERY

168. CONTRACT

169. REVIEWS

170. DESIGN

171. FAB/TEST/DELIVERY

172. CONTRACT

173. REVIEWS

174. DESIGN

175. FAB/TEST/DELIVERY

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193. REVIEWS

196. DESIGN

197. FAB/TEST/DELIVERY

198. CONTRACT

199. REVIEWS

200. DESIGN

201. FAB/TEST/DELIVERY

202. CONTRACT

203. REVIEWS

204. DESIGN

205. FAB/TEST/DELIVERY

206. CONTRACT

207. REVIEWS

208. DESIGN

209. FAB/TEST/DELIVERY

210. CONTRACT

211. REVIEWS

212. DESIGN

213. FAB/TEST/DELIVERY

214. CONTRACT

215. REVIEWS

216. DESIGN

217. FAB/TEST/DELIVERY

218. CONTRACT

219. REVIEWS

220. DESIGN

221. FAB/TEST/DELIVERY

222. CONTRACT

223. REVIEWS

224. DESIGN

225. FAB/TEST/DELIVERY

226. CONTRACT

227. REVIEWS

228. DESIGN

229. FAB/TEST/DELIVERY

220. CONTRACT

221. REVIEWS

222. DESIGN

223. FAB/TEST/DELIVERY

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225. REVIEWS

226. DESIGN

227. FAB/TEST/DELIVERY

228. CONTRACT

229. REVIEWS

230. DESIGN

231. FAB/TEST/DELIVERY

232. CONTRACT

233. REVIEWS

234. DESIGN

235. FAB/TEST/DELIVERY

236. CONTRACT

237. REVIEWS

238. DESIGN

239. FAB/TEST/DELIVERY

232. CONTRACT

234. REVIEWS

235. DESIGN

## JET PROPULSION LABORATORY

APPROVAL RESPONSIBILITY: W. E. Gibson  
 ACHIEVEMENT RESPONSIBILITY: Anthony J. Spoto  
 A. Spoto

## SEASAT-A

## SAR SENSOR SCHEDULE

3  
LEVELORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976  
(Date)

LAST SCHEDULE CHANGE: (Date) (Rev.) (Issue)

STATUS AS OF: 27 SEPTEMBER 1977  
(Date) (Issue)

## FISCAL YEAR

## CALENDAR YEAR

## 1975

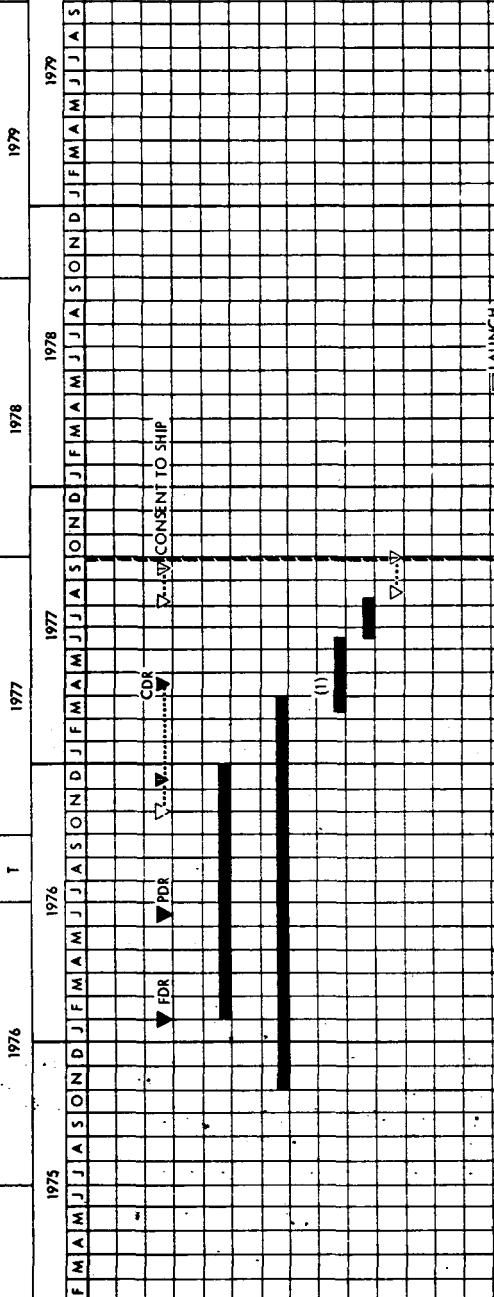
## 1976

## 1977

## 1978

## 1979

## 1970



## NOTES:

- FDR = FUNCTIONAL DESIGN REVIEW
  - PDR = PRELIMINARY DESIGN REVIEW
  - FM = FLIGHT MODEL
  - RX = RECEIVER
  - LC = LOGIC CONTROL
- (1) RETROFIT PLANNED 4/1 - 4/20 ON SENSOR FOR FINAL FLT. UPGRADE

## JET PROPULSION LABORATORY

APPROVAL RESPONSIBILITY: W.E. Gibson  
 ACHIEVEMENT RESPONSIBILITY: Anthony J. Spear

## SEASAT-A

## SMMR SENSOR SCHEDULE

J  
LEVEL

ORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976  
(Date)LAST SCHEDULE CHANGE: (Date)  
(Initials)STATUS AS OF: 27 SEPTEMBER 1977  
(Date)  
(Initials)

FISCAL YEAR

CALENDAR YEAR

1975

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N I

1 SEASAT-A

SEASAT-A

2 FLIGHT SENSOR

SEASAT-A

3 GSFC PARTS PROCUREMENT

SEASAT-A

4 JPL PARTS PROCUREMENT

SEASAT-A

5 ANTENNA AND FEED HORN DELIVERY/TEST

SEASAT-A

6 MOTOR DELIVERY

SEASAT-A

7 ELECTRONICS FAB/TEST

SEASAT-A

8 SENSOR FAB/TEST/DELIVERY

SEASAT-A

9 CONSENT TO SHIP REVIEW

SEASAT-A

10 EM ANTENNA USAGE NEED

SEASAT-A

11 ENG MODEL SENSOR USAGE NEED

SEASAT-A

12 PRE/POST LAUNCH SUPPORT

SEASAT-A

13

SEASAT-A

14

SEASAT-A

15 NIMBUS-G

NIMBUS-G

16

NIMBUS-G

17 SENSOR DESIGN

NIMBUS-G

18 DESIGN PROCUREMENT

NIMBUS-G

19 FAB/TEST/DELIVERY

NIMBUS-G

20 ENG MODEL (EM)

NIMBUS-G

21 PROTO MODEL (PM)

NIMBUS-G

22

NIMBUS-G

23

NIMBUS-G

24 ANTENNA DELIVERY TO JPL

NIMBUS-G

25

NIMBUS-G

26 JOINT SEASAT/NIMBUS REVIEWS

NIMBUS-G

27

NIMBUS-G

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## JET PROPULSION LABORATORY

W. E. Gibson

W. E. Gibson

Anthony J. Spadri

APPROVAL RESPONSIBILITY:

ACHIEVEMENT RESPONSIBILITY:

## SEASAT-A

## VIRR SENSOR SCHEDULE

3  
LEVELORIGINAL SCHEDULE APPROVAL: 27 APRIL 1976  
(Date)

LAST SCHEDULE CHANGE: (Date) (Note) (Initials)

STATUS AS OF: 27 SEPTEMBER 1977  
(Date) (Initials)FISCAL YEAR  
CALENDAR YEAR

1975

1976

1977

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- 1 GSFC/JPL VIRR PROCUREMENT AGREEMENT SIGNED
- 2 PURCHASE ORDER ISSUED TO SBRC
- 3 INTERFACE MEETING
- 4 SBRC CONTRACT
- 5 FLIGHT INSTRUMENT IN BONDED STORAGE (RCA)
- 6 GSE CUSTODY TRANSFERRED TO SEASAT
- 7 FLT INST DEL TO SBRC AND ACCEPTANCE TESTED
- 8 FLIGHT INSTRUMENT FMI/RFI AND CAL TESTS
- 9 FLIGHT INSTRUMENT THERMAL PAINT MOD AND FINAL CAL CHECK
- 10 BONDED STORAGE AT SBRC
- 11 FLIGHT INSTRUMENT CONSENT TO SHIP REVIEWS
- 12 FLIGHT INSTRUMENT DELIVERY TO LMSC
- 13 PRE/POST LAUNCH SUPPORT

NOTES:





